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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,961	12/30/2003	Edward L. McGuire	ZV0001	7880
36489	7590	08/09/2005	EXAMINER	
LEYENDECKER LEMIRE & DALEY, LLC C/O PORTFOLIO IP P.O BOX 52057 MINNEAPOLIS, MN 55402			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/748,961	MCGUIRE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 19 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-11,13-19 and 21-25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,6-11,13,18,19 and 21-25 is/are allowed.
- 6) ☒ Claim(s) 14-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/30/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plessis et al. (US 4675890).

Regarding claims 14 and 16, Plessis teaches a guide tube anode assembly for used in an x-ray generation device, the guide tube anode assembly (figure 2) comprising:

A metallic interior tubular layer (9);

An x-ray radiation absorbing tubular layer (2) at least partially overlaying the metallic tubular layer.

However Plessis fails to teach the metallic interior tubular layer having a thickness of between 10-1000 atomic layers or between 10-18 atomic layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the metallic interior tubular layer having the claimed range of thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Furthermore, applicant has not stated any criticality associated with the certain thickness nor that it solves any long standing problem in the art.

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Consequently, the use of the claimed thickness is considered to be a matter of obvious design choice based on routine experiments.

Regarding claim 15, Plessis teaches a heat conducting tubular layer (4) contained between the metallic interior tubular layer (9) and the x-ray radiation absorbing tubular layer (2).

Regarding claim 17, Plessis teaches a thin metal layer (4) covering at least one end of the guide tube anode assembly, the thin metal layer (4) comprising essentially the same material as the metallic interior tubular layer (column 3 line 43-44).

***Allowable Subject Matter***

Claims 1, 4, 6-11, 13, 18-19 and 21-25 are allowed over prior art.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 1, 4, 7-11, 13, 21 and 25, the prior art fails to teach a plurality of capillary tube x-ray anodes including first and second linear row of anodes wherein metallic material for the first and second linear row x-ray anodes are different as claimed in independent claim 1.

Regarding claim 6, the prior art fails to teach an electron deflector adapted to deflect an electron beam to one of a plurality of first metallic tube anode and a plurality of second metallic tube anode exclusively and at least one first x-ray anode and at least one second x-ray anode simultaneously as claimed in independent claim 6.

Regarding claims 18-19 and 22-24, the prior art fails to teach a method of generating a highly directional beam of x-ray radiation by directing a high energy

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election beam into first ends of a first linear array of capillary tube anodes and directing a beam of x-ray radiation having essentially a characteristic line spectrum related to a specific metal utilized in the metal tubes of the first linear array of capillary tube anode down the metal tubes and out of second ends of the capillary tube anodes as claimed in independent claim 18.

### ***Response to Arguments***

Applicant's arguments, see pages 1-2, filed 5/19/2005, with respect to Drawing objection, Specification objection and USC 112 rejection have been fully considered and are persuasive. The Drawing objection, Specification objection and USC 112 rejection has been withdrawn.

Applicant's arguments with respect to claims 10-17 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

8/14/05  
HKS



DAVID V. BRUCE  
PRIMARY EXAMINER